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AUTHOR Soraci, Sal A., Jr.; And Others
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ABSTRACT

Research has shown that learned-helpless children, who make attributions for failure to lack of ability, tend to show impaired performance of decreased persistence in the face of challenge. In similar situations, mastery-oriented children, identified by their tendency to attribute failure to insufficient effort, show improved performance or increased persistence. In this study, fifth and sixth grade children, characterized as either mastery-oriented (N=22) or learned-helpless (N=23) based on a pretest (the Intellectual Achievement Responsibility Scale), were presented via computer with a series of span of apprehension assessments. Although both groups demonstrated equivalent attentional functioning on the initial assessment, subsequent assessments indicated a decrease in span of apprehension in learned-helpless relative to mastery-oriented children, with the latter group demonstrating stability and a trend toward improvement across assessments. These differential patterns of attentional functioning parallel the typical performance trends observed for these groups in previous research; i.e., that under conditions of uncertainty on a challenging task, performance decrements are characteristic of learned-helpless individuals, whereas mastery-oriented individuals tend to maintain relatively high levels of performance. As an extension of previously observed performance patterns to more discrete indices of attentional functioning, the present results support the view that attentional distractibility is characteristic of learned-helpless individuals, whereas attentional focusing is characteristic of mastery-oriented children. (ABL)

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Differential Attentional Functioning in Learned-Helpless and Mastery-Oriented Children

Soraci, S. A. Jr., Leggett, E. L., Dweck C. S.,
and A. M. Valk

Author affiliations are, respectively:
Vanderbilt University, Harvard University,
University of Illinois at Urbana-Champaign,
and Mount Holyoke College

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Abstract

Fifth and sixth grade children, characterized as either mastery-oriented or learned-helpless based on a pretest, were presented with a series of span of apprehension assessments. Although both groups demonstrated equivalent attentional functioning on the initial assessment, subsequent assessments indicated a decrease in span of apprehension in learned-helpless relative to mastery-oriented children, with the latter group demonstrating stability and a trend toward improvement across assessments. These differential patterns of attentional functioning parallel the typical performance trends observed for these groups in previous research; i.e., that under conditions of uncertainty on a challenging task, performance decrements are characteristic of learned-helpless individuals, whereas mastery-oriented individuals tend to maintain relatively high levels of performance. As an extension of previously observed performance patterns to more discrete indices of attentional functioning, the present results support the view that attentional distractibility is characteristic of learned-helpless individuals, whereas attentional focussing is characteristic of mastery-oriented children.

Differential Attentional Functioning in Learned-Helpless and Mastery-Oriented Children

Much research has demonstrated that attributions for failure are significant predictors of differential performance in challenging situations (e.g., Diener & Dweck, 1978; Dweck, 1975; Dweck & Bush, 1976; Dweck & Reppucci, 1973). Specifically, helpless children, who make attributions for failure to lack of ability, tend to show impaired performance or decreased persistence in the face of challenge. In similar situations, mastery-oriented children, identified by their tendency to attribute failure to insufficient effort, show improved performance or increased persistence. These motivational tendencies are revealed not only when failure is clearly salient, but often in the absence of clear performance cues. These patterns suggest that perhaps there is differential attentional functioning in children with these distinct motivational orientations. More precisely, when focussed attention is necessary to master a challenging task, mastery-oriented children may effectively recruit the requisite attentional processes. By contrast, helpless children may exhibit distractable, diffuse attention, thus diminishing their potential for effective performance.

The current research was undertaken as a specific examination of attentional variability in mastery vs. helpless children, using a variation of the classic attentional task developed by Estes (1965), the

span of apprehension. In this task, subjects are briefly presented with a random array of letters (distractors), and they identify which of two possible targets (e.g., a "T" or an "F") is present in the array. The span of apprehension task provides a relatively conservative test of attentional performance in several ways. First, stimulus presentation is so rapid (typically 100 - 150 milliseconds) that peripheral scanning (i.e., eye movements) is generally not considered possible. Therefore, the operative scanning processes are assumed to be centrally mediated. Second, the response required is merely a forced choice between two possible targets. Thus, memory demands are minimal. Lastly, the presentation of trails is individually paced for each child to assure task-readiness. These factors, taken together, are often cited (e.g., Blackwell, McIntyre & Murray, 1983; Denton & McIntyre, 1978) as evidence that the task provides a relatively pure, "motivation-free" assessment of attention. In addition, for our present purposes, the brevity of stimulus presentations precludes individual monitoring of performance, creating an ambiguous performance situation.

Several hypotheses were advanced. First, under conditions of ambiguous performance feedback, it was predicted that mastery and helpless children would reveal differential accuracy rates in identifying the targets across repeated blocks of trials. Additionally, it was predicted that helpless children may require more blocks of trials then mastery children to attain a performance criterion of 70 - 80% accuracy. Conversely, mastery-oriented children may not only reach

criterion sooner but may also continue to improve performance at more difficult, faster speeds. Futhermore, impaired performance of helpless children may be accentuated under failure feedback conditions.

Method

A total of 52 fifth and sixth grade students from a public elementary school completed the Intellectual Achievement Responsibility (IAR) scale (Crandall, Katkovsky & Crandall, 1965), a measure that has been used in previous research to assess mastery vs. helpless attributional tendencies. Children were classified as mastery or helpless, resulting in a sample of 22 mastery (12 females, 10 males) and 23 helpless (11 females, 12 males). Children were seen individually at their school in a session lasting 20 minutes. Each child sat facing a computer screen at eye level, and performed a series of span of apprehension trials programmed on an Apple 2E computer.

To obtain initial performance baselines for each child, the task was introduced and a 20 trial block with no performance feedback was administered at 150 msec. In order to ascertain peak performance for individuals, speeds for the second block of 20 trials were varied according to the accuracy of response on the first block. Nineteen percent of the mastery and 13% of the helpless children exceeded the criterion range of 70 - 80% accuracy; these children were presented with the second block of trials at 125 msec. Again, no performance feedback was given. Children who failed to meet criterion and children who exceeded criterion were given a third block of 20 trials. Those who

exceeded criterion again were moved to a faster speed (125 or 100 msec.), and others remained at 150 msec. After a maximum of three 20 trial blocks, all children participated in the second part of the study, in which failure feedback was programmed across 5 block of trials. This report will focus only on the first part of the study.

Results

On the first block of trials there were no significant differences between the mastery and helpless groups (Helpless M = 70.8% accuracy, Mastery Md = 72.5% accuracy), indicating that initial attentional proficiency at the task was comparable and within the criterion range of 70 - 80% accuracy. However, in the absence of feedback about their performance on the initial trials, the helpless and mastery groups subsequently demonstrated a significant difference in their perforamnce on the second block of 20 trials, $F(1,45) = 4.897$, $p = .032$. The mastery group improved performance beyond their baseline (M = 74.09) whereas the helpless group deteriorated in accuracy falling below both their baseline and criterion (M = 67.17). Additionally, these differential performance trends are evident in examining the third block of trials. Because 45% of the helpless children had not met criterion on block 2, they required a third block of trials, again at 150 millesconds. In contrast, because they had exceeded the criterion range of 80%, 36% of the mastery children were presented with a third block of trials at a faster speed. Indeed, 90% of the helpless children who required a third block of trials were still performing the task at 150 msec. By contrast, only 25% of the

mastery group was still performing at 150 msec. while the other 75% were performing a faster, more difficult task (Fisher's (1), $p = .009$).

Conclusion

These preliminary results suggest that mastery and helpless motivational tendencies may be revealed in attentional variability on a relatively pure attentional measure. Results support the hypothesis that the mastery orientation may be characterized by increased attentional focus on task demands in the face of challenge, whereas the helpless orientation may be characterized by more variable, diffused attention over time. Further implications of this study suggest that attentional tasks such as the span of apprehension, which are alleged to be motivation-free, may indeed be susceptible to motivational factors.

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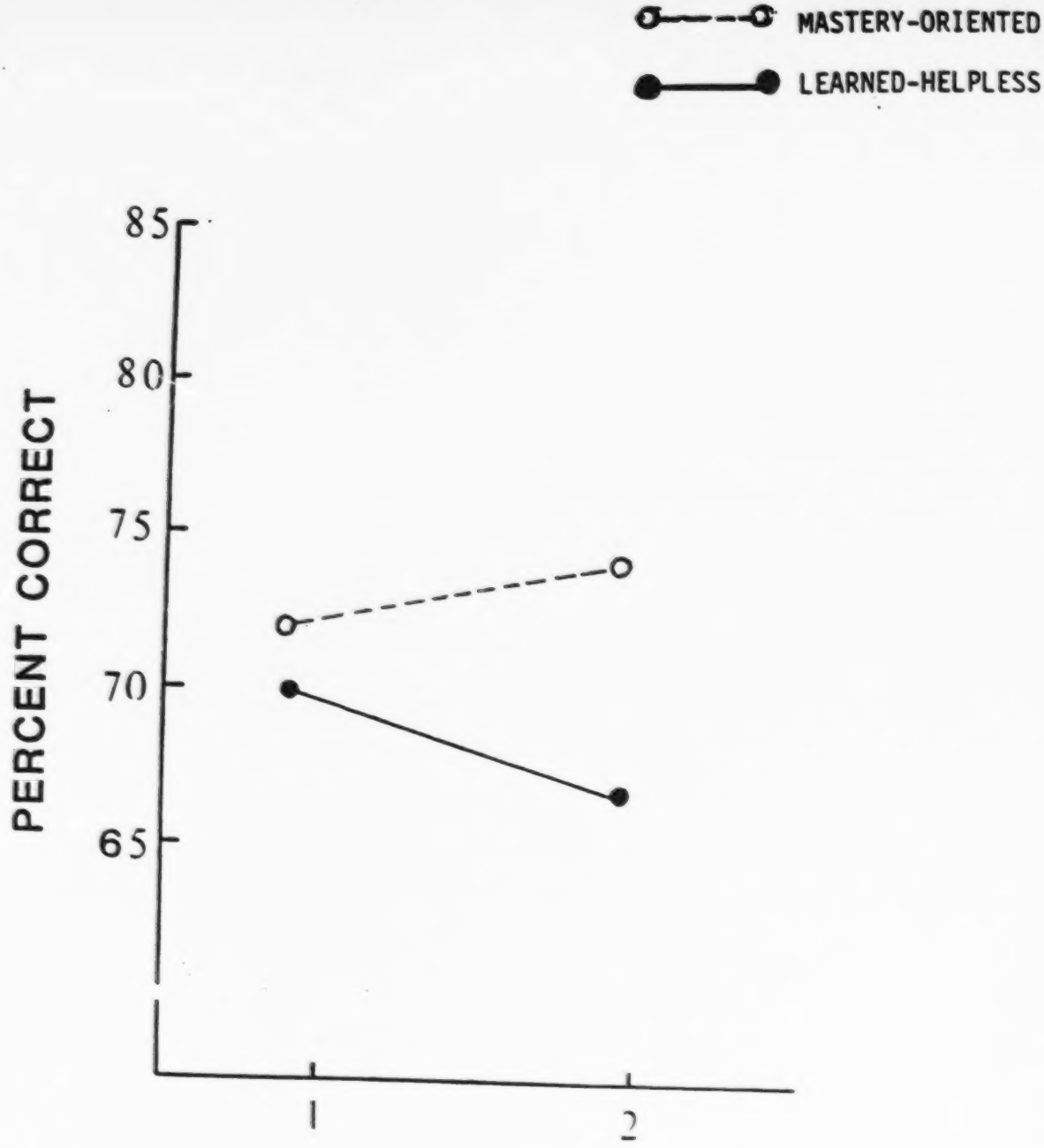
Table 1

Percentage of Helpless and Mastery Children Who Exceeded, Met or Fell Below Criterion Accuracy Range

Group	Exceeded	Met	Below
Mastery (n = 22)	32	59	9
Helpless (n = 23)	4	52	44


MASTERY-ORIENTED
LEARNED-HELPLESS
PERCENT CORRECT
85
80
75
70
65
1
2
ASSESSMENT TRIAL BLOCK